

Primary Characteristics

I_F	1.0	A
V_{RRM}	800	V
I_{FSM}	30	A
V_F	1.75	V

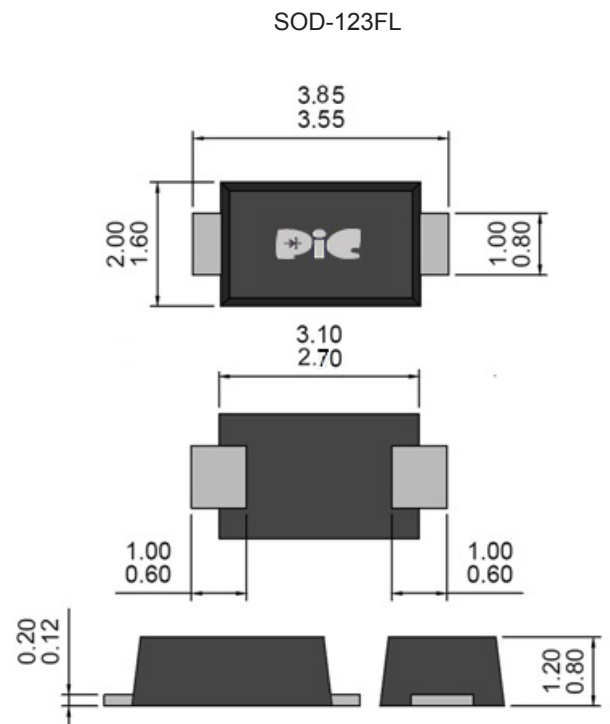
Features

- For surface mounted applications in order to optimize board space
- Ideal for automated placement
- Glass Passivated Chip Junction
- High temperature soldering : 260°C/10 seconds at terminals
- Lead-free & halogen-free parts, RoHS compliant

Mechanical Data

- Case: Molded plastic over passivated junction
- Terminals: Solder plated solderable per MIL-STD-750 Method 2026
- Polarity: Color band denotes cathode end
- Weight: approx.. 0.0166 grams

Package Outline Dimensions



Unit: millimeters

Maximum Ratings & Electrical Characteristic

Parameter	Symbol	ES1008FL	UNITS
Repetitive Peak Reverse Voltage	V_{RRM}	800	Volts
RMS Voltage	V_{RMS}	560	Volts
DC Blocking Voltage	V_{DC}	800	Volts
Average Forward Current $T_L=120^\circ C$	$I_{F(AV)}$	1.0	Amps
Peak Forward Surge Current: 8.3ms single half sine-wave $T_L=25^\circ C$	I_{FSM}	30	Amps
Max. Instantaneous Forward Voltage at 1.0A	V_F	1.75	Volts
DC Reverse Current at Rated $T_j=25^\circ C$	I_R	1	μA
Reverse Recovery Time $I_F=0.5A$ $I_R=1A$ $I_{RR}=0.25A$	T_{rr}	35	ns
Typical Thermal Resistance (NOTE1.2)	$R_{\theta JA}$	200	$^\circ C/W$
	$R_{\theta JC}$	30	
Operating Junction and Storage Temperature Range	T_j, T_{STG}	-55~+150	$^\circ C$

Notes:

- (1) Mounted on an FR4 PCB, single-sided copper, mini pad.
- (2) Mounted on an FR4 PCB, single-sided copper, with 10cm x 10cm copper pad area.

Rating & Characteristic Curves

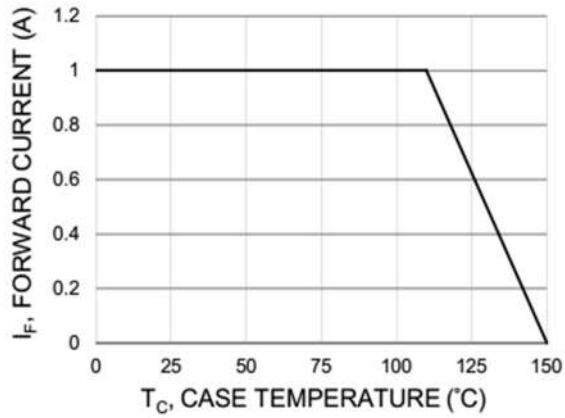


Fig. 1 Forward Current Derating Curve

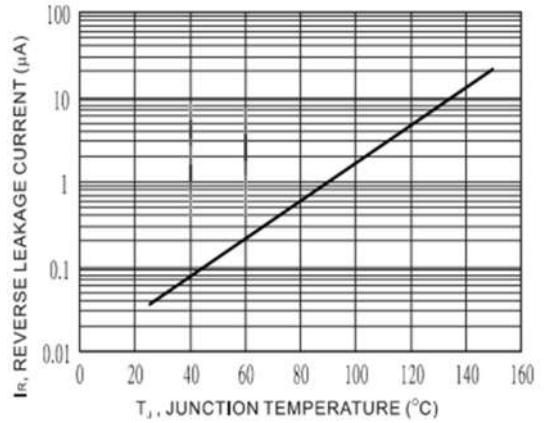
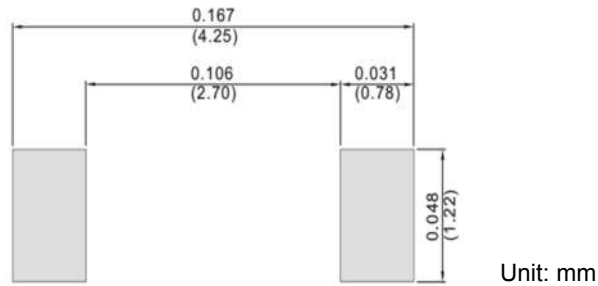


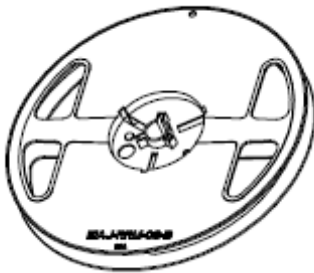
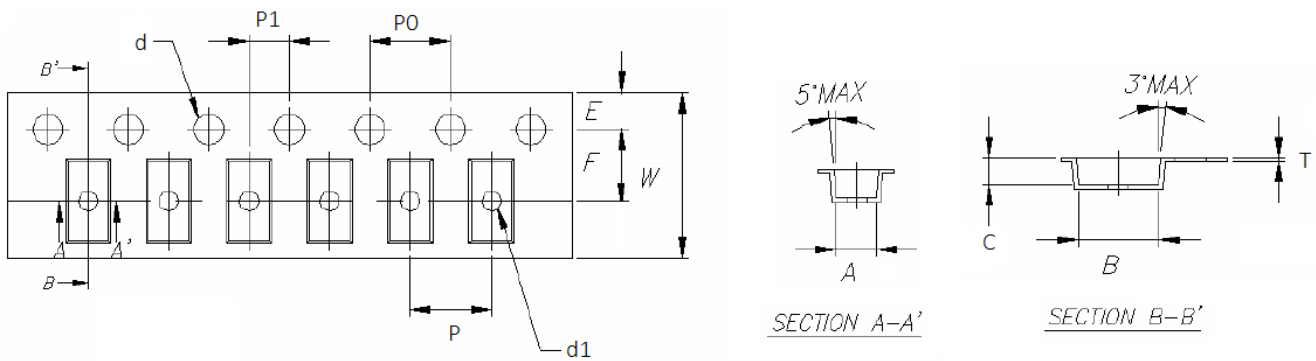
Fig. 2 Typical Leakage Current vs. Junction Temperature

Pad Layout

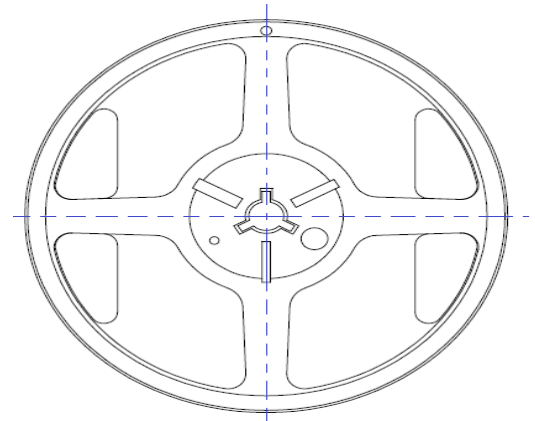
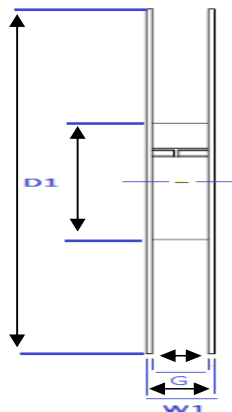
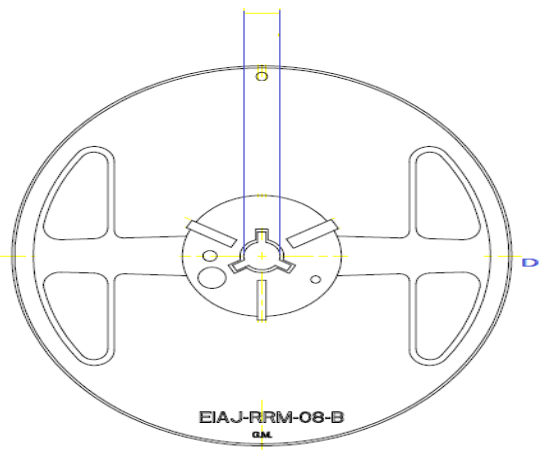


Packaging Specifications

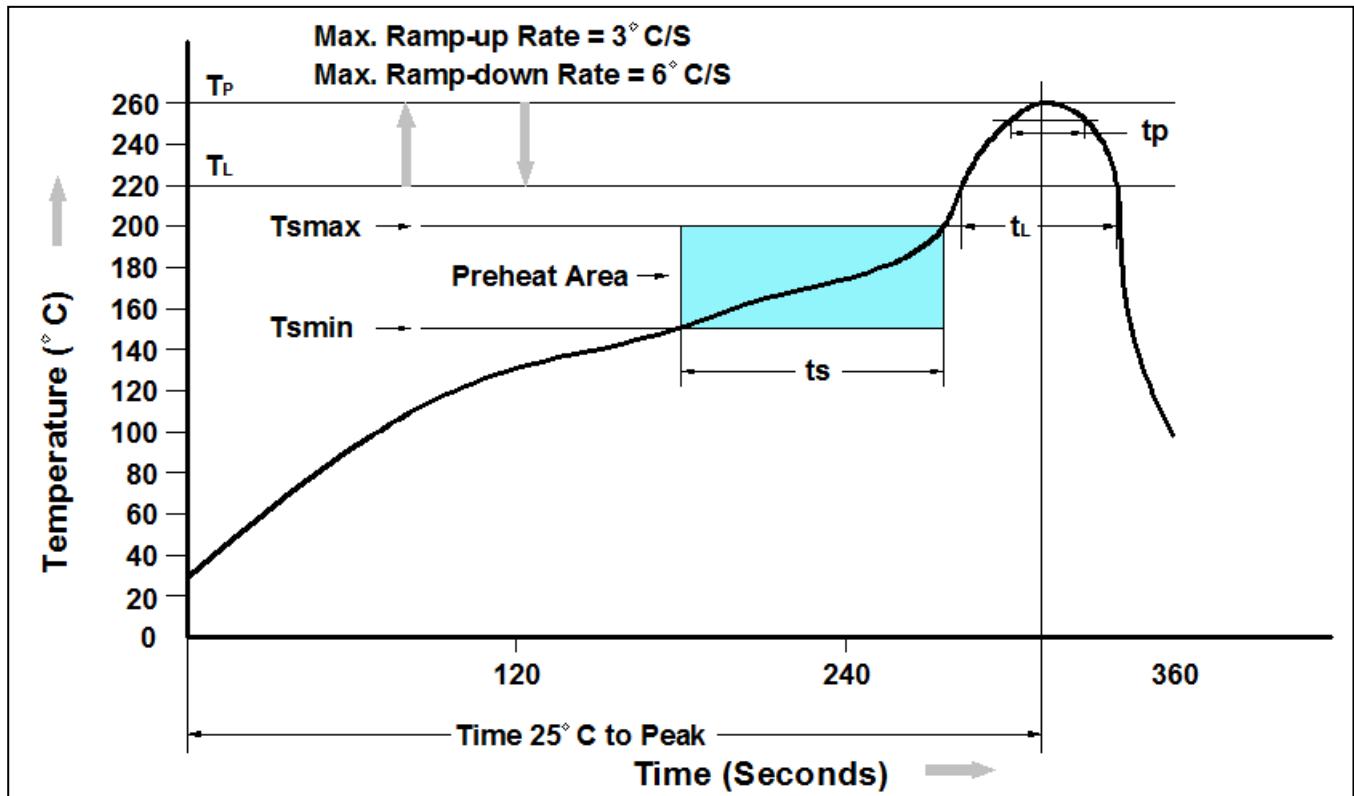
Package	W (mm)	A (mm)	B (mm)	C (mm)	d1 (mm)	d (mm)	E (mm)	F (mm)	P (mm)	P0 (mm)	P1 (mm)	T (mm)
SOD-123FL	8±0.2	2.00±0.1	3.85±0.1	1.1±0.1	1.0	1.50±0.1	1.75±0.1	3.5±0.05	4±0.1	4±0.05	2±0.05	0.23±0.05
SOD-123HE	8±0.3	2.00±0.1	4.00±0.1	1.45±0.1	1.0	1.55±0.1	1.75±0.1	3.5±0.05	4±0.1	4±0.10	2±0.05	0.23±0.10
SOD-323FL	8±0.2	1.37±0.1	2.75±0.1	0.85±0.1	1.00	1.60±0.1	1.75±0.1	3.50±0.05	4±0.1	4±0.10	-	0.20±0.10
SOD-323HE	8±0.3	1.60±0.1	2.80±0.1	0.95±0.1	1.0	1.50±0.1	1.75±0.1	3.5±0.05	4±0.1	4±0.10	2±0.05	0.23±0.10
SMAF	12±0.3	2.9±0.1	5.5±0.1	2.1±0.1	1.5	1.55±0.1	1.75±0.1	5.5±0.05	4±0.1	4±0.10	2±0.05	0.23±0.10
SMA-S	12±0.2	2.65±0.1	5.25±0.1	1.35±0.1	1.0	1.55±0.1	1.75±0.1	5.5±0.05	4±0.1	4±0.05	2±0.05	0.23±0.10
SMA-HE	12±0.2	2.65±0.1	5.25±0.1	1.35±0.1	1.0	1.55±0.1	1.75±0.1	5.5±0.05	4±0.1	4±0.05	2±0.05	0.23±0.10



Package	D (max.) (mm)	D1 (min.) (mm)	D2 (mm)	G (min.) (mm)	W1 (min.) (mm)
SOD-123FL	178	50.0	13.0±0.2	8.4	11.4
SOD-123HE	178	50.0	13.0±0.2	8.4	11.4
SOD-323FL	178	50.2	13.0±0.2	8.0	11.5
SOD-323HE	178	50.0	13.0±0.2	8.4	11.4
SMAF	178	50.0	13.0±0.2	12.4	18.0
	330	50.0	13.0±0.2	12.4	18.0
SMA-S	178	50.0	13.0±0.2	12.4	18.0
SMA-HE	178	50.0	13.0±0.2	12.4	18.0



Recommend IR Reflow Soldering Thermal Profile



Profile Feature	Pb-Free Assembly Profile
Temperature Min. (T _{smin})	150°C
Temperature Max. (T _{smax})	200°C
Time (t _s) from (T _{smin} to T _{smax})	60-120 seconds
Average Ramp-up Rate (t _L to t _P)	3°C/second max.
Liquidous Temperature (T _L)	217°C
Time (t _L) Maintained Above (T _L)	60 – 150 seconds
Peak Temperature	260°C +0°C / -5°C
Time (t _P) within 5°C of actual Peak Temperature	30 seconds
Ramp-down Rate (T _P to T _L)	6°C/second max
Time 25°C to Peak Temperature	8 minutes max.

Ordering Information

Part Number	Description	Quantity
ES1008FL	SOD-123FL Reel	3000 pcs

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